

The authorities as cited by the examiner (Office action dated May 8, 2000) are specifically concerned with "such as" statements. It is clear that "such as" statements are generally used to restrict a part to a defined function. "Whereby" statements are generally included in claims to introduce a function or result at the end of a claim.

Both claims 1 and 5 included "whereby" statements to emphasize that the article claimed is larger than similar articles produced in the past.

The examiner's argument states, "claim 1 recites the broad recitation of a pipe larger than similar pipe produced in the past, and the claim also recites a diameter larger than 15 feet which is the narrower statement of the range/limitation."

Within the claim, there is no basis to know what is meant by the suggestion of a larger article than has been produced in the past, apart from the information provided by the limitation of a specific diameter as presented in the claim. In other words, no limitation or range is established by the recitation of a pipe larger than similar pipe produced in the past.

The Board of Appeals chose to describe the appellant's invention with one sentence; "The appellant's invention relates to spirally formed pipe and more particularly to larger sizes than have been produced in the past (specification, p.1)". It is readily apparent that to include the whereby statement does not create confusion but rather, specifies a result which helps to define the invention.

There is no basis to reject Claims 1-9 under 35 U.S.C. § 112, therefore the applicant withdraws / cancels Amendment A.

Claims Rejections Under - 35 USC § 102

Claims 1 and 2 were rejected under 35 USC § 102(b) as being anticipated by Reed. The patent to Reed is said to disclose “in figures 1 and 2, a tubular object which is a pipe comprising an elongated strip of ductile material 4, such as metal, that is formed into joined adjacent helical convolutions having a diameter of 20 feet”.

The Reed patent covers a method and apparatus utilized to erect a **helically wound silo**. Figure 1 is a perspective view of the completed helically wound silo. Figure 2 is an enlarged fragmentary perspective view of the lower portion of the silo, with parts broken away and sectioned.

A spirally formed pipe, comprising an elongated strip of ductile material formed into joined adjacent helical convolutions may be used to create a silo or tank, **but a silo or tank can not be used as a spirally formed pipe**. The silo or tank, as described within the reference is a completed structure, the helically wound portion is not complete separate from the additional elements required to create it.

The Reed patent does not disclose a tubular object which is a pipe as the examiner has suggested. While the terms tube and pipe may be somewhat interchangeable, a tube may have a closed end, such as a test tube, or a tube of paste, a pipe does not share that possibility. The Reed patent does not identically disclose or describe the applicants invention as required by section 102. The patent to Reed correctly describes a silo as having a cylindrical body portion. To meet the claims the Reed patent would require the removal of elements, and such removal is not taught by the reference. Additionally, there is no basis to know whether the removal of such elements would result in an article which could be used as a pipe. In other words, a pipe is self supporting, it remains self supported in a substantially circular form regardless of it's physical position, a silo would likely collapse if positioned horizontally upon the ground.

The prior art of Reed lacks any suggestion that the reference should be modified in a manner required to meet the claims. Claims 1 and 2 are therefore patentable over this reference under 35 U.S.C. § 102(b).

The prior art of Reed contains elements that are not a part of the applicant's invention. Claims 1 and 2 are therefore patentable over this reference under 35 U.S.C. § 102(b).

Claims 1, 2, and 4 were rejected under 35 USC § 102(b) as being anticipated by McDonald. The patent to McDonald is said to disclose "in figures 1 and 2, a tubular object which is a pipe comprising an elongated strip of ductile material 62, such as metal, that is formed into joined adjacent helical convolutions having a diameter of approximately 21 feet".

The patent to McDonald covers a method of making a circular building structure and more particularly to silos used for storage of corn and grain. Figure 1 is a projected view of a **section of spirally wound silo**. Figure 2 is a detailed view of a **section of the silo** showing the driving assemblies. The McDonald patent does not present a complete view of the invention. It is also clear from the figure 1, 2 and the description that there are several items which are integral to the the structure.

A spirally formed pipe, comprising an elongated strip of ductile material formed into joined adjacent helical convolutions may be used to create a silo or tank, **but a silo or tank can not be used as a spirally formed pipe**. The silo or tank, as described within the reference is a completed structure, the helically wound portion is not complete separate from the additional elements required to create it.

The McDonald patent does not disclose a tubular object which is a pipe as the examiner has suggested. While the terms tube and pipe may be somewhat interchangeable, a tube may have a closed end, such as a test tube, or a tube of paste, a pipe does not share that possibility.

The McDonald patent does not identically disclose or describe the applicants invention as required by section 102. The McDonald patent would require the removal of elements, and such removal is not taught by the reference. Additionally, there is no basis to know whether the removal of such elements would result in an article which could be used as a pipe. In other words, a pipe is self supporting, it remains self supported in a substantially circular form regardless of it's physical position, a silo would likely collapse if positioned horizontally upon the ground.

The prior art of McDonald lacks any suggestion that the reference should be modified in a manner required to meet the claims. Claims 1 and 2 are therefore patentable over this reference under 35 U.S.C. § 102(b).

The prior art of McDonald contains elements that are not a part of the applicant's invention. Claims 1 and 2 are therefore patentable over this reference under 35 U.S.C. § 102(b).

Claims 1, 2, and 4 were rejected under 35 USC § 102(b) as being anticipated by Steuber. The patent to Steuber is said to disclose "in figures 2 and 3, a tubular object which is a pipe comprising an elongated strip of ductile material 12a, such as metal, that is formed into joined adjacent helical convolutions having a diameter of 31 feet".

The Steuber patent covers a method and apparatus for constructing multiple storage tanks. Figure 2 is a side view of a storage tank. Figure 3 is similar to Figure 2 enlarged to show more detail. The detailed description, column 3, first paragraph explains that each storage tank may be constructed in accordance with several other patents including Reed and McDonald. It is clear from figures 2 and 3 as well as the inclusion of multiple manufacturing techniques that there are several items which are integral to the the structure.

A spirally formed pipe, comprising an elongated strip of ductile material formed into joined

adjacent helical convolutions may be used to create a silo or tank, **but a silo or tank can not be used as a spirally formed pipe.** The silo or tank, as described within the reference is a completed structure, **the helically wound portion is not complete separate from the additional elements required to create it.**

The Steuber patent does not disclose a tubular object which is a pipe as the examiner has suggested. While the terms tube and pipe may be somewhat interchangeable, a tube may have a closed end, such as a test tube, or a tube of paste, **a pipe does not share that possibility.**

The Steuber patent does not identically disclose or describe the applicants invention as required by section 102. The Steuber patent would require the removal of elements, and such removal is not taught by the reference. Additionally, there is no basis to know whether the removal of such elements would result in an article which could be used as a pipe. In other words, a pipe is self supporting, it remains self supported in a substantially circular form regardless of it's physical position, a tank would likely collapse if positioned horizontally upon the ground.

The prior art of Steuber lacks any suggestion that the reference should be modified in a manner required to meet the claims. Claims 1 and 2 are therefore patentable over this reference under 35 U.S.C. § 102(b).

The prior art of Steuber contains elements that are not a part of the applicant's invention. Claims 1 and 2 are therefore patentable over this reference under 35 U.S.C. § 102(b).

Rather than continue to repeat arguments for each reference the following arguments apply to Reed, McDonald and Steuber.

Each of the references disclose methods and apparatus that require time consuming setup not required when utilizing spirally formed pipe. A spiral pipe can be produced at high speed tilted

up to produce a tank or silo without the time and expense of the methods used by Reed, Steuber and McDonald. This fact illustrates that *the applicant's* invention provides for ***Unappreciated Advantages over these prior art references, that no anticipation exists. Claims 1 to 4 are patentable over these prior art references under 35 U.S.C. § 102(b).***

The references only recognize the construction of tanks and silos, while the applicant's invention could be used to produce highway overpasses, metal buildings such as houses and barns, large storm water culverts, etc. This new pipe invention solves ***unrecognized problems that Reed, McDonald and Steuber could not have anticipated, therefore these references are not applicable. Claims 1 to 4 are patentable over these prior art references under 35 U.S.C. § 102(b).***

The applicant's large diameter spirally formed pipe clearly provides for unappreciated advantages, and solves for unrecognized problems. It is also obvious that the applicant's invention ***has not been implemented.*** This speaks not only to the lack of anticipation by these references but to obviousness as well. The patent references of McDonald, Reed and Steuber ***are not applicable. Claims 1 to 4 are patentable over these prior art references under 35 U.S.C. § 102(b).***

The patents to Reed, McDonald and Steuber do not suggest that the silos or tanks shown could be used as pipe, nor do they provide any suggestion that they could be modified in any way to meet the claims. These patents actually teach away from any suggested modification in that they are individually complete. This again illustrates that these references not only do not anticipate, but also do not render obvious the applicant's invention.

With Reed, McDonald and Steuber it may be an *opinion* that it is possible to pick the cylindrical portion of the silo or tank, then choose to remove the upper portion and choose to remove the base portion, and then suggest that you have arrived at an article that is clearly a pipe, and that such is anticipated, but such is not the case.

The Board of Appeals Decision page 4 states “When the claimed invention is not identically disclosed in a reference, and instead requires picking and choosing among a number of different options disclosed by the reference, then the reference does not anticipate.”

Additionally, tanks and silo structures are specifically designed for containing fluid or grain materials, and as such, are subject to different physical characteristics. That is, internal forces are being exerted by the contents, but the exterior of the article is only subject to minor influences such as wind. The McDonald reference includes exterior support members 96, to provide support for the silo structure. While this type of support may assist in containing interior product, it would not help the article if one attempted to use it as a pipe in a buried structural application.

Pipe has specific inherent characteristics, it is hollow, it is round, it can be buried (and stay round), it can be used to convey fluids, and gases, etc., and as disclosed by the applicant has many other uses as well.

If the examiner believes that the elimination of elements is not required to understand that the article could be used as a pipe, and that as a pipe it would meet the claims of the applicant’s invention, the examiner must provide some evidence or scientific reasoning to support his position. The inherent characteristics of silos and tanks must somehow match up to those of pipe. The reference must provide some teaching to make such a conclusion possible.

Claims Rejections Under - 35 USC § 103

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Reed, McDonald or Steuber in view of the Handbook of Steel Drainage and Construction Products (from now on referred to as the “Handbook”). The patents to Reed, McDonald and Steuber are said to disclose all of “the recited structure with the exception of clearly disclosing an increase in dimensional

proportions as pipe size is increased". It is suggested that it would be obvious to modify the dimensional proportions of the articles in Reed, McDonald and Steuber to be increased as the size of the article is increased as suggested by the Handbook.

This rejection suggests that it is obvious to remove the top portion of the article, remove the base structure and any other components not required by the claims, then assume that an offset utilized to assist in welding a seam is identical to a profile with corrugations that can be modified as suggested by the Handbook. ***The prior art of Steuber, McDonald and Reed in view of the Handbook lack any suggestion that the reference should be modified in a manner required to meet the claims, claim 3 is therefore patentable over this reference under 35 U.S.C. § 103(a). These prior references do not contain any suggestion (expressed or implied) that they be combined, or that they be combined in the manner suggested. Claim 3 is therefore patentable over these references under 35 U.S.C. § 103(a).***

Additionally, this rejection overlooks that Reed, McDonald and Steuber teach away from the suggested modification in that their combined teaching already suggest a diameter up to 31 feet is possible apart from any teachings contained in the Handbook. ***Claim 3 is therefore patentable over these references under 35 U.S.C. § 103(a) in that these references teach away from the suggested combination.***

Handbook teaches limit of claim 3
These arguments illustrate that the examiner has not found within the prior art an adequate suggestion of the desirability of doing what the applicant has done, and additionally that there would be a reasonable expectation of success as required. See MPEP -- SECTION--706.02.

Claims 1, 2 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over PRD Cortec Housing Manufacturing System (from now on referred to as Cortec) in view of McFatter. The Cortec reference is said to disclose all of "the recited structure with the exception of the diameter of the pipe being larger than 15 feet". The Mcfatter patent is said to disclose

“an apparatus that is used to create a spirally formed tubular section in a continuous process having a diameter of 31 feet”. It is suggested that “it would have been obvious to one skilled in the art to modify the pipe made in Cortec to have a diameter larger than 15 feet as suggested by McFatter”.

This suggestion is not found within the references, no connection is made between the references, the McFatter reference is simply included to suggest a possible larger diameter for Cortec, to assume that 31 feet could be produced as well. Cortec does not refer to grain silos and storage tanks and the McFatter patent does not suggest the possibility of constructing buildings, drainage structures, etc. *These prior references do not contain any suggestion (expressed or implied) that they be combined, or that they be combined in the manner suggested. Claims 1, 2 and 4 are therefore patentable over these references under 35 U.S.C. § 103(a).*

When the examiner presents that “it would have been obvious to one skilled in the art to modify the pipe made in Cortec to have a diameter larger than 15 feet as suggested by McFatter”. it is implied that the methods used to produce these articles is somehow interchangeable. In other words, the McFatter tank is a manufactured article and the Cortec building structure is a manufactured article, both of these articles are manufactured in such a similar fashion as to enable one skilled in the art to simply look at the one and produce the other and that a simple review of the McFatter patent would enable Cortec to modify the method in which the Cortec article is produced to either combine the McFatter teachings, or utilize the McFatter method. This, however, would actually require unsuggested modifications. The McFatter patent discloses a method of producing the article that is completely foreign to the method used to produce pipes as shown in the Cortec reference. The reference of Campbell correctly illustrates in Figure 1 a “typical helically wound pipe winding machine” as is required to produce the Cortec pipe. *The prior art of Cortec in view of McFatter lacks any suggestion that the reference should be modified in a manner required to meet the claims, claims 1, 2 and 4 are therefore patentable over these references under 35 U.S.C. § 103(a).*

It is possible that the suggestion “it would have been obvious to one skilled in the art to modify the pipe made in Cortec to have a diameter larger than 15 feet as suggested by McFatter”, implies that the method in which the article is produced is irrelevant allowing a simplistic view that a review of Mcfatter which presents a spiral article with a 31 foot diameter, would provide Cortec with enough information to know that such is possible thereby allowing Cortec to know that it would be possible to produce an article of the same size.

Even with this simplistic view, the Cortec reference must still be modified to meet the applicant’s claims, and the motivation for such modification must stem from some teaching within the references or from some knowledge available to those skilled in the art. The examiner suggests a motivation “if a larger diameter pipe is needed and simply to increase useful volume”, and certainly one skilled in the art would be aware of these concepts, but this does not provide the motivation to combine these two particular references. *These prior references do not contain any suggestion (expressed or implied) that they be combined, or that they be combined in the manner suggested. Claims 1, 2 and 4 are therefore patentable over these references under 35 U.S.C. § 103(a).*

Besides providing the motivation to suggest that the references be modified in a manner required to meet the claims the examiner must present that there would be a reasonable expectation of success as required. See MPEP -- SECTION--706.02. In other words, there is no basis to know why Cortec would be led to consider any part of the reference to Mcfatter, but even if there were, it would still be necessary for there to be some teaching of McFatter or Cortec to know that such a modification would be successful. There is nothing in the references that would point to a result of the unsupported modification, to suggest that such a modification would be physically, commercially, or in any other way successful. *The prior art of Cortec in view of McFatter lacks any suggestion that the reference should be modified in a manner required to meet the claims, claims 1,2 and 4 are therefore patentable over these references under 35 U.S.C. § 103(a).*

Claims 5-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cortec in view of the Handbook reference. The Cortec reference is said to disclose all of “the recited structure including a pipe that has a diameter larger than 144 inches, however, does not disclose reshaping of the pipe into arch shapes or increasing the dimensional proportions of the pipe as pipe size is increased”. It is suggested that it would have been obvious to one skilled in the art to modify the pipe of Cortec to include arch shapes as identified by the Handbook.

The Cortec reference teaches of a cylindrical building structure that is larger than 144 inches in diameter. The reference states “The system is not limited to the production of houses but can also be used to create tubes for irrigation pipes, bridges, drainage, sewers, culverts and concrete voids”. While the applicant concedes that this renders pipes for such purposes up to 15 feet in diameter obvious, it does not actually anticipate pipes for such purposes up to 15 feet. It should also be understood that the Handbook reference never discloses a spirally formed pipe above 10 feet in diameter, nor does it disclose a spirally formed pipe reshaped into an arch shape with a beginning diameter above 10 feet. Just as with the Holcomb reference, the Cortec reference in view of the Handbook could suggest the possibility of arching the pipe in Cortec but only to a size up to 10 feet in diameter. In other words, the Handbook reference would require modifications not taught by the prior art. Additionally, the suggestion to combine these references would only extend to the extent that these references overlap, that is, up to 10 feet in diameter. Beyond this range the Handbook reference provides no information regarding spirally formed pipe. ***Therefore the prior art of Cortec in view of the Handbook lacks any suggestion that the reference should be modified in a manner required to meet the claims, claims 5-9 are therefore patentable over this reference under 35 U.S.C. § 103(a).***

These prior references do not contain any suggestion (expressed or implied) that they be combined in the manner suggested. Claims 5-9 are therefore patentable over these references under 35 U.S.C. § 103(a).

It is important to note that any time a rejection of claims is presented under ***35 U.S.C. § 103(a)***

It is the responsibility of the examiner to provide an adequate suggestion of the desirability of doing what the applicant has done, and additionally, that there would be a reasonable expectation of success. See MPEP -- SECTION--706.02. This suggestion must stem from some teaching in the reference and not from the applicant's disclosure. The only suggestion the examiner has provided is that pipes can be reshaped "as needed for a particular application as suggested by the Handbook", but this does not provide a suggestion to combine the reference with Cortec, nor is there a suggestion of how such a combination would be met with a reasonable expectation of success. The fact is the Cortec reference does not mention arch shaped pipe of any size and the Handbook references never suggests a spiral pipe formed into an arched pipe above 10 feet in diameter. *Again these prior references do not contain any suggestion (expressed or implied) that they be combined, or that they be combined in the manner suggested. Claims 5-9 are therefore patentable over these references under 35 U.S.C. § 103(a).*

The Handbook reference teaches away from the suggested modification in that it provides solutions for producing large diameter pipes and arch shapes that are not produced from spirally formed pipe. *Claims 5-9 are therefore patentable over these references under 35 U.S.C. § 103(a) in that these references teach away from the suggested combination.*

Claims 5-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Handbook in view of Cortec. The Handbook reference is said to disclose all of "the recited structure set forth above with the exception of explicitly stating that spirally formed pipes can exceed 144 inches in diameter before reshaping into arches". It is suggested that "it would have been obvious to one skilled in the art to modify the dimensions of the pipe used for reshaping in the handbook by using a 15 foot diameter spirally formed pipe as suggested by Cortec, to meet applications requiring larger diameter pipes".

The examiner's statement, "to meet applications requiring larger diameter pipes", must be taken

to be the suggested motivation to combine the references, but as identified above, The Handbook reference teaches away from the suggested modification in that it provides solutions for producing large diameter pipes and arch shapes that are not produced from spirally formed pipe. ***Claims 5-9 are therefore patentable over these references under 35 U.S.C. § 103(a) in that these references teach away from the suggested combination.***

The fact is the Cortec reference does not mention arch shaped pipe of any size, and the Handbook references never suggests a spiral pipe formed into an arched pipe above 10 feet in diameter. Again, *these prior references do not contain any suggestion (expressed or implied) that they be combined, or that they be combined in the manner suggested. Claims 5-9 are therefore patentable over these references under 35 U.S.C. § 103(a).* Beyond this range the Handbook reference provides no information regarding spirally formed pipe. ***Therefore the prior art of the Handbook in view of Cortec lacks any suggestion that the reference should be modified in a manner required to meet the claims. Claims 5-9 are therefore patentable over this reference under 35 U.S.C. § 103(a).***

The examiner's suggestion to combine the references is not supported and no presentation has been provided for the expectation of success.

Claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Handbook in view of McFatter. The Handbook reference is said to disclose all of "the recited structure with the exception of explicitly reciting that spiral formed pipes can have diameters larger than 15 feet". "In order to provide more useful volume, it would have been obvious to one skilled in the art to make spirally formed pipes having diameters larger than 15 feet as suggested by McFatter which teaches that pipes can be formed by spiral joining methods that can exceed 15 feet in diameter to meet the needs of the user".

This rejection does not include any mention of arched pipe, there is no suggestion of how it

would be obvious to modify the Handbook in view of McFatter to include arch shapes above 144 inches, it is therefore unclear what the basis is for the examiner's rejection of claims 5-9.

The Handbook reference discloses spiral pipes to 10 feet in diameter and arch shapes produced from spiral pipes with diameters up to 10 feet. The Handbook also teaches of larger sizes of pipes and arch products produced with structural plate sections up to 21 feet in diameter. The Handbook reference would clearly utilize structural plate pipe to produce a pipe larger than 10 feet if such was desired "in order to provide more useful volume". There would be no basis to seek out the McFatter storage tank construction procedures which makes no reference to "pipes" and never suggests any other "needs of the user" than storage tanks or silos. ***Claims 1-9 are therefore patentable over these references under 35 U.S.C. § 103(a) in that these references teach away from the suggested combination.***

The Handbook reference does not make reference to spiral tank manufacturing, and the McFatter storage tank does not include pipe manufacturing at all, there is no support for a suggestion that they be combined. *These prior references do not contain any suggestion (expressed or implied) that they be combined, or that they be combined in the manner suggested. Claims 1-9 are therefore patentable over these references under 35 U.S.C. § 103(a).* Additionally, modification would be required to the teachings of the Handbook, and those modifications are not suggested by either of the references. ***Therefore the prior art of the Handbook in view of McFatter lacks any suggestion that the reference should be modified in a manner required to meet the claims, claims 1-9 are therefore patentable over these references under 35 U.S.C. § 103(a).***

The examiner's suggestion to combine the references is not supported and no presentation has been provided for the expectation of success.

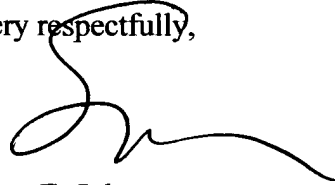
Conclusion

With the exception of canceling Amendment A there was no reason to reopen prosecution of this application. The reference to Smith, Sr. included a large diameter spiral structure that the examiner could have used to make the same type of arguments presented in this most recent office action. This reference was provided by the examiner on May 8, 2000. The reference of Cortec was provided by the applicant in 1999. This patent when issued will date back to May 1998, the applicant will only have 15 years of patent protection left, provided the examiner passes the application on to be issued soon.

Conditional Request For Constructive Assistance

Please pass this application on to be issued. Best Wishes for the Holidays!

Very respectfully,



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December 10, 2002



Scott E. Johnston, Applicant